4/91
White-tailed Deer
Odocoileus virginianus Ochrourus

Range:
In appropriate habitats the 30 subspecies of white-tailed deer (Odocoileus virginianus Ochrourus) fares well from near treeline in southern Canada (60 degrees north latitude) to sub-equatorial South America (15 degrees south latitude). (Taylor 1956, Trefethem 1970, Whitehead 1972).

Washington Distribution:
White-tailed deer are native to Washington and were found in abundance in some foothills and valleys of the northwest by white explorers and trappers in the early 1800's (Pengally 1961, and Allen 1971).

White-tailed deer are currently found throughout the ten far eastern counties of Washington and in north central Washington (Okanogan). Highest deer densities are found in northeastern Washington (Stevens, Pend Oreille, and Spokane counties). The white-tailed deer is expanding its range in eastern Washington to the west and south of existing populations.

Habitat Requirements:
White-tailed deer require a juxtaposition of food, cover, and water as do all wildlife species. The importance of edge effect to white-tailed deer has always been known and is becoming increasingly documented (Alverson 1988).

Elevations occupied by whitetails range from the lowest elevations to more than 2000m (6,500')(Peek 1984). Concentrations are highest in the lower elevations (below 1200m [4,000']). Whitetails are seldom found in the subalpine and alpine forests.

The habitat of white-tailed deer includes riparian areas, mixed species woodlands, agricultural croplands, forests with multiple successional stages, burned over shrub fields, and short diversified slopes rather than long open slopes. Fields and open slopes are used but generally thick shrub or tree cover is nearby.

Although many whitetails live their entire lives in relatively small areas (1-3 sq. miles), a high percentage of our whitetails move up to 12km (20 mi.) between summer and winter ranges. Migration for whitetails is a function of the habitat rather than of the deer species (Kramer 1972).

Winter Range - Winter range is determined by a combination of factors: elevation, slope, aspect, snow depth, browse quantity and quality, presence of closed canopy mature forests (snow intercept cover), temperatures and traditional deer movement patterns.

Closed canopies of mature forests along streams and at lower elevations are extremely important whitetail habitat. Closed canopy mature forests are needed to provide cover during severe winters or where snow depth exceeds 46cm (18")(Peek 1984). Whitetails move about more easily beneath trees where snow depths are less than in the open. They often develop trails that provide access to feeding areas adjacent to suitable winter cover.

Traditional high concentration whitetail winter ranges in northeast Washington are on southwest to southeast aspects which reduce snow accumulation due to solar energy. High use range extends to at least 850m (2,800') elevation on these aspects. Steepest slopes may extend over 900m (3,000'). On west and east slopes use is generally below 670m (2,200') and on north slopes below 600m (2,000'). Many deer winter above these elevations but are more dependent on snow intercept cover, low precipitation, or special climatic impacts such as Lake Roosevelt.

Primary winter browse includes: redstem ceanothus, evergreen ceanothus, serviceberry, rose, Oregon grape, chokecherry, willow, dogwood, snowberry, Douglas fir, and any available forb or agricultural crop (alfalfa, grain seed heads, etc.)

Spring Range - Whitetails concentrate on open slopes and fields of grasses, forbs, winter wheat, and alfalfa where it is available as soon as temperatures promote green-up. This is a time when the deer fat reserves are at the lowest so these areas may be very important to population survival and productivity. Escape and thermal cover near these areas is important.

Summer/Fall Range - High diversity in forest successional stages with brushy escape cover in close proximity to food sources high in succulence and protein is optimal. Our highest deer numbers are found where small irrigated alfalfa fields are bordered by timber and brushlands.

Fall hunting pressure, especially on bucks, can be a limiting factor in local habitats due to increased road access.

Late Fall/Early Winter Range - Snow begins to accumulate in the higher elevations in November. Snow intercept cover and travel corridors on southeast to southwest slopes from at least 1200m (4,000') down to lower winter ranges can allow many whitetails to use these areas until late December in many years. This saves browse in the lower ranges for later use. Riparian areas can be important as travel corridors but by themselves are usually not enough to ensure adequate travel corridors.

Limiting Factors:
Winter snow depth severely limits distribution of whitetails. Whitetails prefer wintering areas that have snowpacks less than 30cm (12") deep for any extended

period (Lustig 1972). Where movement to lower elevation habitats is possible, whitetails will generally leave areas after 25-43cm (10-17") of snow accumulation. Winter weather (snow accumulation, temperature, duration) and the quality and quantity of available winter range are the primary limiting factors for whitetail populations in Washington.

Management Recommendations:
The negative impacts of open roads on the use of adjacent habitat by big game is well documented (Perry and Overly 1977, Thomas 1979). Current road densities in white-tailed deer range generally exceed desired levels for impacts on white-tailed deer and other wildlife. The few remaining roadless areas should be maintained for wildlife benefits and to provide recreational opportunities to these limited access areas.

All new road construction should be closed to motorized public use. Existing roads should be closed to motorized public use where densities exceed 1.5 mi./sq. mi. on summer range or 0.5 mi./sq. mi. on winter range. Road construction standards should be the minimum feasible and screening vegetation retained. Roads, landings, and skid trails should be planted to grasses and especially clover. This will provide increased forage and control noxious weeds.

Logging, farming, and small wildfires have created the diversified habitats that have resulted in the increase in the white-tail populations in our best white-tailed deer areas.

Timber cuts and prescribed burns should be restricted to less than 8 ha (20 acres) in size and selection cuts that do not reduce overstories to less than 70 percent crown closure should be used if important whitetail habitat is to be logged (Mundinger 1981, Owens 1981). Distance to cover is optimum at 90m (300') and should not exceed 180m (600')(Thomas 1979). Irregular shaped cuts maximizing the amount of edge between habitat types provides improved benefits to white-tailed deer.

Manage winter habitat to retain adequate closed canopies of mature forests for snow interception (Peek 1984). This cover type should cover about 50 percent of the area in stands at least 180m (600') across.

Manage forage areas (especially on winter range) through logging and controlled burning to create a variety of young successional stages with a large component of preferred shrubs and forbs.

Prescribed burning, agricultural crops, and range fertilization are other tools that could improve winter range forage areas.

Manage summer and spring/fall transitional ranges with adequate travel corridors (with snow intercept cover). This should include not only riparian areas but also

natural travel lanes often including ridges and south facing slopes. Travel corridors should provide contiguous pieces of habitat from summer to winter range.

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Key Points:
Habitat Requirements:
· Need food, water, and cover in close proximity within each three sq. mile area.
· Optimal deer habitat is small irrigated alfalfa fields bordered by timber and brush lands.
· Disturbance and open roads reduce use of winter and fawning habitat.

Management Recommendations:
· Timber cuts and prescribed burns should be restricted to less than 20 acres in size.
· Timber harvest should not reduce overstories to less than 70 percent crown closure.
· Maintain 50 percent of habitat in mature stands of conifers at least 600 feet in diameter.
· Maintain quality, disturbance free fawning areas and reduce disturbance during winter.
· Maintain minimum feasible road construction standards and maintain road densities below 0.5 mile per mile of habitat on winter range.